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Flow-injection analysis using catalytic reactions in environmental monitoring (review)

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Abstract

The state-of-the-art and prospects of flow-injection analysis (FIA) for environmental monitoring (natural and effluent water, atmospheric air, precipitation, soil, etc.) using catalytic reactions (including catalytic polarographic currents) are discussed. Catalytic effects of Cu(II), Mn(II), Co(II), Hg(II), Fe(II, III), Se(IV), V(IV, V), Mo(VI), Cr(III, VI), iodide, bromide, fluoride, chloride, and carbonate ions in FIA redox reactions are illustrated. The merit of various activators - citrate and tartrate ions, dipyridyl, Tiron, etc. - in enhancing sensitivity and selectivity of catalytic indicator reactions is outlined.